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(56) Documents Cited

GB 2349874 A

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(54) Abstract Title

A closure fitment for sealing a foodstuffs container

(57) A closure fitment 12 for a container 10 and a method of sealing a container 10 having a mouth with a outwardly extending rim 16, comprising an injection moulded plastics annulus 12 having an inner wall (fig 2, 22) for making sealing contact with the outer surface of the rim 16, and a retaining portion 20 projecting radially inwards to engage the underside of the rim 16, and a foil seal 14 adhered to the upper surface of the annulus 12. A weakened portion 30 may be provided on the annulus 12 to assist in breaking of the inner wall 22 engaging the rim of the container, and the annulus 12 may be formed integrally with a utensil (fig 8, 40), the utensil (40) may be connected to the annulus 12 by means of a hinge (fig 9, 42). The hinge (42) may have an over-centre or toggle action so that the utensil (40) is biased into two stable positions, the utensil (40) may be attached to the weakened portion 30 of the annulus 12. The container 10 may be filled after the step of fitting the annulus 12.

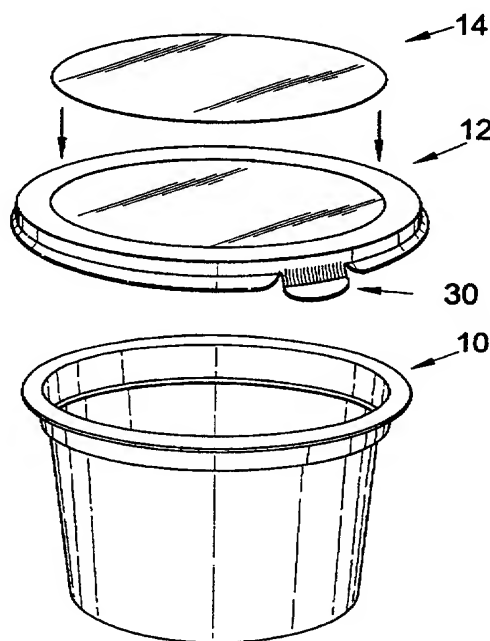


Fig.1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

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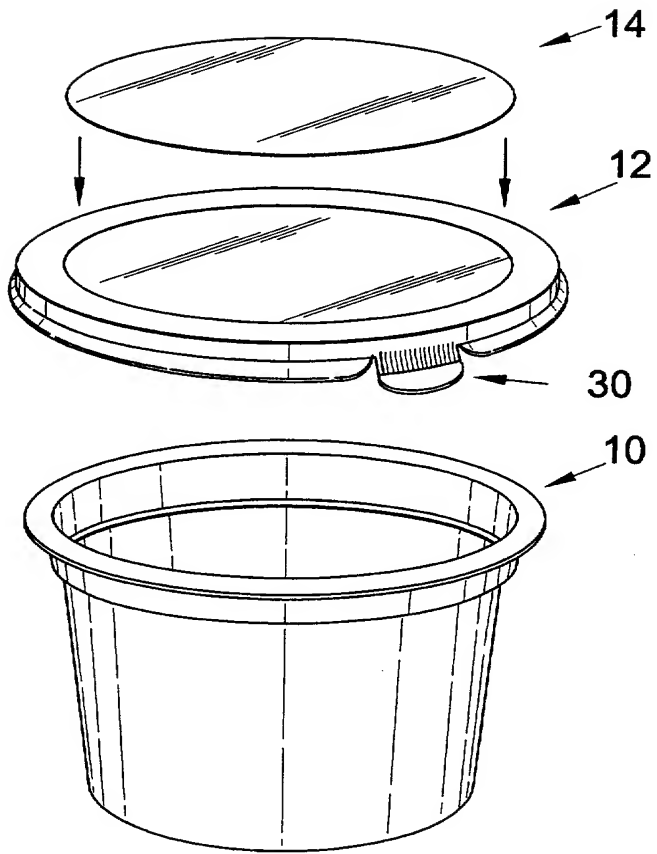


Fig. 1

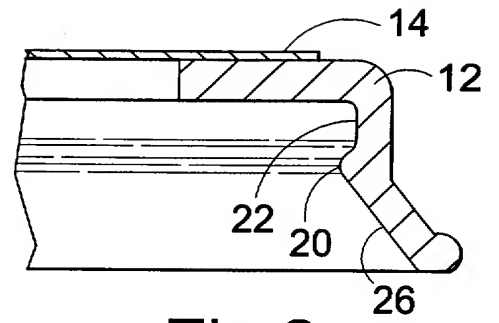


Fig. 2

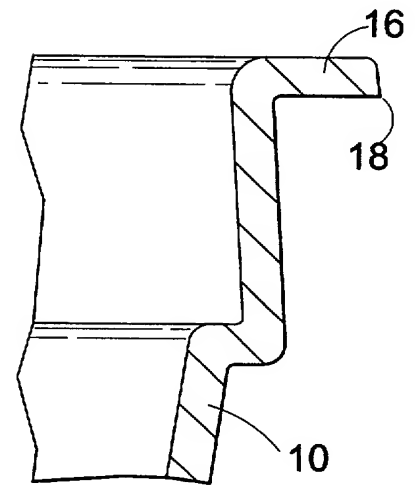


Fig. 3

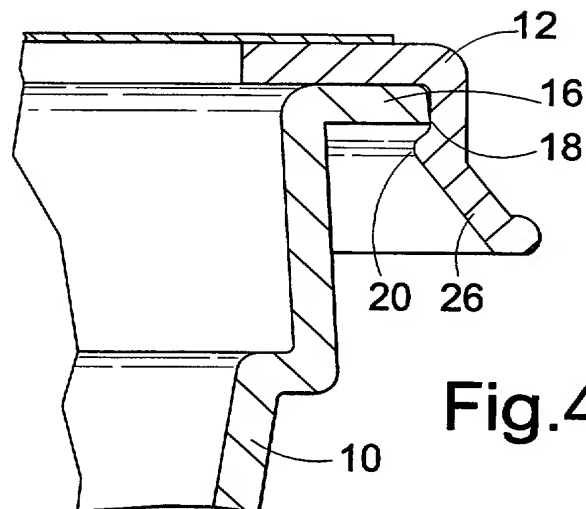
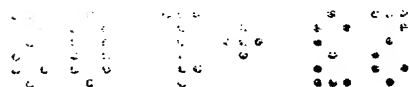
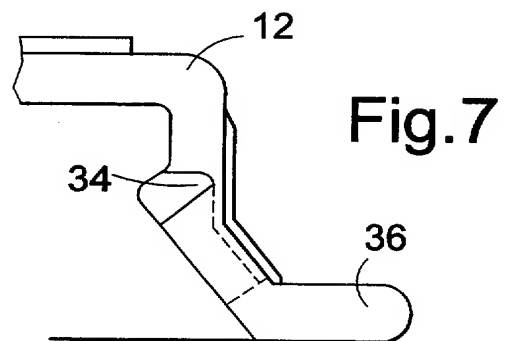
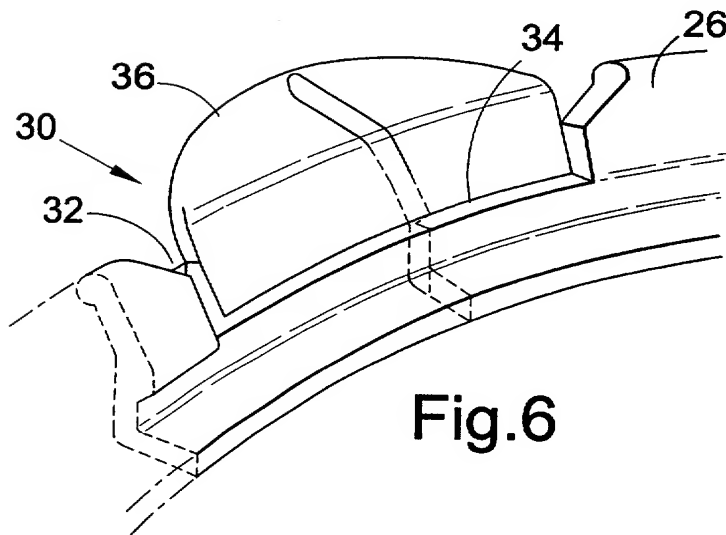
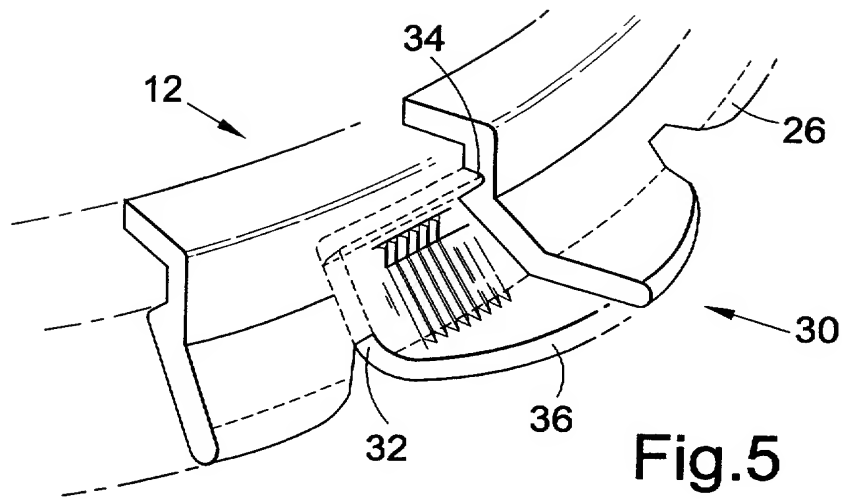


Fig. 4





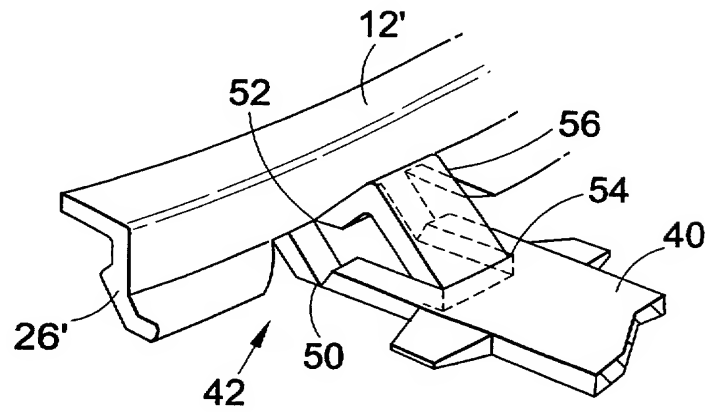
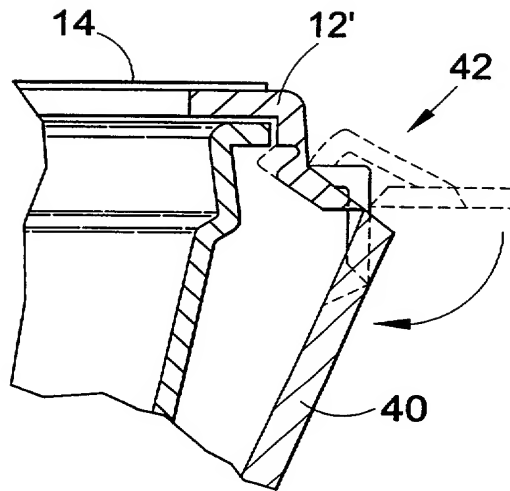
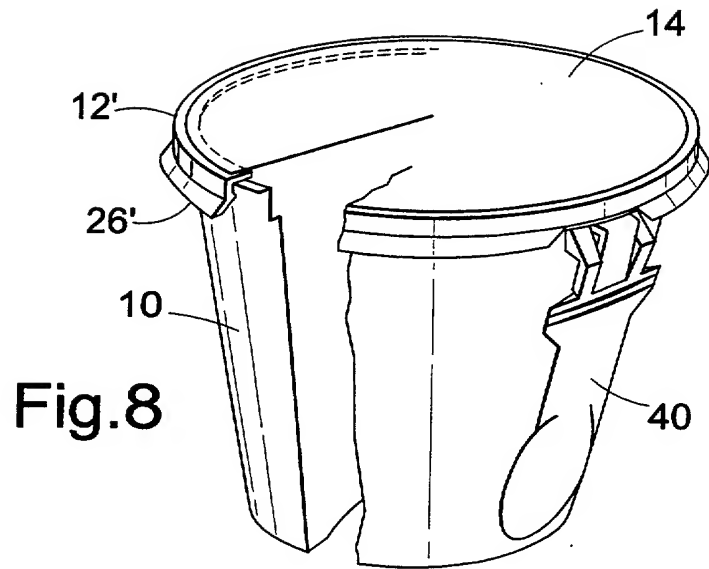


Fig.10

CONTAINER FITMENT

The present invention relates to a fitment for a container and is particularly suitable for a foodstuff
5 container having a mouth with a surrounding rim that projects radially beyond the walls of the container.

It is common for foodstuffs containers to be sealed in such a manner that once they have been opened they cannot be
10 resealed. The contents are intended to be consumed as soon as the container has been opened and not stored for use at a later time. Examples of such foodstuffs are yoghurt, desserts and quick snacks such as soups and noodles.

15 Conventionally, such containers are sealed by adhering a foil seal directly to the upper surface of the rim. The foil seal may be made of a metal, a plastics coated metal or a plastics material. A replaceable fitment is sometimes fitted over the foil seal.

20

A disadvantage of such a container is that it does not at the time of purchase provide clear proof of tampering as evidence of tampering is disguised once the fitment has been replaced.

25

With a view to mitigating the foregoing disadvantage, there is provided, in accordance with a first aspect of the invention, a fitment for a foodstuffs container having a
30 mouth with a surrounding rim that projects radially beyond the walls of the container, the fitment comprising an injection moulded plastics annulus having a circumferentially continuous cylindrical inner wall for making sealing contact with the radially outer surface of the rim and having at least one retaining portion projecting radially
35 inwards from the annulus to engage the underside of the rim and thereby hold the fitment against the mouth of the container.

A foil seal may be adhered to the upper surface of the annulus or to the upper surface of the rim of the container.

A seal is formed in the present invention by an
5 interference fit between an inner wall of the annulus and the radially outer surface of the rim at the mouth of the container. Because of the normal manner in which the containers are formed (they are usually thermoformed and cut from a web) they tend to have a sharp edge on their rim that
10 bites into the annulus of the fitment to provide an effective seal.

If the retaining portion is circumferentially continuous or if several retaining portions are provided in
15 close proximity to one another, the annulus cannot be separated from the container without having to be broken. Removal of the fitment cannot therefore take place without leaving tell-tale signs. If the fitment is placed over the foil seal, it overlies the edges of the foil seal and
20 prevents it from being peeled off the rim of the container. If the foil seal is adhered to the fitment, then because it presents a larger area to which the foil seal can be adhered, it is possible to ensure that the entire circumference of the foil seal is securely adhered to the
25 fitment so that no part of it can be gripped to enable the foil seal to be peeled away without leaving clear evidence of tampering. In all cases, puncturing of the foil seal cannot of course be done without leaving a trace.

30 It is preferred to provide a weakened portion on the annulus so that its inner wall engaging the rim of the container can be intentionally broken when the fitment is to be removed. Once the wall ceases to be circumferentially continuous, the interference fit with the rim is destroyed
35 and the fitment can be raised with relative ease.

It is possible to form the annulus of the fitment integrally with a utensil, such as a spoon to facilitate the consumption of the contents of the container.

5 The utensil may be connected to the annulus by means of a hinge so that it can lie against the wall of the container when in storage.

10 The hinge preferably has an over-centre or toggle action so that the utensil is biased into two stable positions, the utensil being in the same plane as the annulus in the first stable position and being urged against the outer wall of the container in the second stable position. In this way, the utensil and annulus can readily
15 be moulded in the first position while still allowing the utensil to be bent into the second position which is more convenient for storage of the containers.

20 It is advantageous for the utensil to be attached to the weakened portion of the annulus so that it can be used to apply leverage when breaking the seal between the container and the fitment.

25 The invention additionally also provides a method of sealing a foodstuff container which comprises providing a foodstuff container having a mouth with a surrounding rim that projects radially beyond the walls of the container, fitting to the mouth of the container an injection moulded plastics annulus having a circumferentially continuous
30 cylindrical inner wall to make sealing contact with the radially outer surface of the rim and having at least one retaining portion projecting radially inwards from the annulus to engage the underside of the rim, and subsequently adhering a foil seal to the upper surface annulus.

35

In the method aspect of the invention, the container may be filled with the foodstuff either before or after the

step of fitting the annulus but the filling must of course be completed before the foil seal has covered the mouth of the container.

5 The invention offers the additional advantage that it simplifies production when the lid carries printed matter in that all the printing can now be carried out on the flat foil seal. There is no need to load different lids when using different foodstuffs and the same sealing annuli can
10 be used regardless of the contents of the containers. After the containers have been filled, the foil seal bearing the appropriate printed matter may be adhered to the annulus to seal the contents of container.

15 By fitting the annulus to the container after it has been filled, it is possible to avoid any risk of the foodstuff splashing on to, or otherwise coming into contact with, the surface to which the foil seal is to be adhered thereby reducing any likelihood of the foil seal not
20 adhering properly to the plastics annulus.

The invention will now be described further, by way of example, with reference to the accompanying drawings, in which :

25 Figure 1 shows an exploded view of a container and a fitment of present invention,

Figure 2 is a partial section through the fitment,

Figure 3 is a partial section through the container,

Figure 4 is a partial section of the container with the
30 fitment in place,

Figure 5 is a perspective view from above of a weakened portion of the fitment,

Figure 6 is a perspective view from below of the weakened portion of the fitment,

35 Figure 7 is a view similar to that of Figure 2 through the weakened portion of the fitment,

Figure 8 is a perspective view of a container fitted with an alternative form of fitment incorporating an eating utensil,

Figure 9 is a section through the hinge connecting the eating utensil to the fitment in the embodiment of Figure 8, and

Figure 10 is a perspective view of the hinge of Figure 9 shown in an alternative position.

Figures 1 to 7 show a container 10 having a rim 16 surrounding its mouth. The rim 16 projects beyond the side walls of the container 10 and is formed with a sharp edge 18. The sharp edge 18 results from the container normally having been formed by being cut from a thermoformed sheet.

The fitment of the container is formed in two parts, namely an injection moulded annulus 12 and a foil seal 14 adhered to the annulus 12. The foil seal may be formed of metal, plastics or a plastics coated metal. The annulus 12 has an inner wall 22 which is dimensioned to form an interference fit with the outer circumference of the rim 16. As a result, when the fitment is fitted to the container 10, as shown in Figure 4, the sharp edge 18 of the rim 16 bites into the wall 22 and forms an airtight seal.

To hold the fitment over the mouth of the container 10, the skirt 26 of the annulus 12 has a radially inwardly projecting retaining portion 20 that engages under the rim 16. The retaining portion 20 may be a single continuous projection but, for ease of manufacture, it is preferred that it be discontinuous.

A fitment as so far described can only be removed from the container 10 once fitted by breaking the annulus 12 to destroy the interference fit between the fitment 12 and the

container 10. Such breaking of the annulus 12 would of course be readily perceived at the point of sale.

To assist in the removal of the fitment, it is
5 intentionally provided with a weakened portion designated 30 in the drawings. The weakened portion 30 is shown in more detail in Figures 5, 6 and 7. In particular the skirt 26 has cut-outs 32 that define a flap 36. The flap 36 is surrounded by a recess 34 which allows the flap 36 to be hinged
10 upwards, as viewed in Figure 5, at the same time cracking the wall 22 in two places where it mates with the rim 16 of the container 10.

The embodiment of Figures 8, 9 and 10 differs from that
15 previously described in that the annulus 12' has a weakened portion which is formed integrally with a spoon 40. The spoon 40 is connected to the skirt 26' at the weakened portion by means of a hinge 42 that has an over centre action. In particular, the spoon 40 is connected at three
20 different hinge lines 50, 52, 54 to the annulus 12'. An L-shaped hinge member 56 acts as the spring of a toggle which is at its maximum extension when the three hinge lines 50, 52 and 54 all lie in the same plane.

25 The spoon 40 and the fitment 12' are moulded in the position in which they are shown in Figure 10, that is to say with the spoon 40 in the same plane as the annulus 12'. After fitting the annulus 12' to the container 10, the spoon 40 is bent downwards into the position shown in Figures 8 &
30 9, whereupon the resilience of the member 56 will bias the spoon 40 against the wall of the container.

Aside from providing a useful utensil to facilitate
eating of the contents of the container, the spoon 40 can be
35 used as a lever to assist in breaking the annulus 12' at its weakened portion.

The fitment may be applied to the container in two parts during production. First the annulus 12 or 12' is first fitted to the container 10 and thereafter the foil seal 14 is adhered to the annulus. The annulus 12, 12' may be fitted to the container 10 either before or after it has been filled but the foil seal cannot of course be applied until after the container has been filled. If the annulus 12, 12' is fitted after the filling operation, the risk of contamination of the surface to which the foil seal 14 adheres is avoided.

It will be seen that the invention provides a fitment that cannot be removed from a container without leaving a tell-tale sign of the tampering. Furthermore, the invention dispenses with the need to print on individually formed fitments as the printing can be applied to the foil seal while it is still in a continuous sheet form, that is to say before it has been separated into separate discs.

CLAIMS

1. A fitment for a foodstuffs container having a mouth with a surrounding rim that projects radially beyond the walls of the container, the fitment comprising an injection moulded plastics annulus having a circumferentially continuous cylindrical inner wall for making sealing contact with the radially outer surface of the rim and having at least one retaining portion projecting radially inwards from the annulus to engage the underside of the rim and thereby hold the fitment against the mouth of the container.

2. A fitment as claimed in claim 1, wherein a weakened portion is provided on the annulus to assist in breaking of the inner wall engaging the rim of the container when the fitment is to be removed.

3. A fitment as claimed in claim 1 or 2, wherein the annulus is formed integrally with a utensil to facilitate the consumption of the contents of the container.

4. A fitment as claimed in claim 3, wherein the utensil is connected to the annulus by means of a hinge.

5. A fitment as claimed in claim 4, wherein the hinge has an over-centre or toggle action so that the utensil is biased into two stable positions, the utensil being in the same plane as the annulus in the first stable position and being urged against the outer wall of the container in the second stable position.

6. A fitment as claimed in claim 5 appended to claim 2, wherein the utensil is attached to the weakened portion of the annulus.

7. A fitment as claimed in any preceding claim,
wherein a foil seal is adhered to the upper surface of the
fitment.

5 8. A method of sealing a foodstuff container which
comprises

providing a foodstuff container having a mouth with a
surrounding rim that projects radially beyond the walls of
the container,

10 fitting to the mouth of the container an injection
moulded plastics annulus having a circumferentially
continuous cylindrical inner wall to make sealing contact
with the radially outer surface of the rim and having at
least one retaining portion projecting radially inwards from
15 the annulus to engage the underside of the rim, and

subsequently adhering a foil seal to the upper surface
annulus.

9. A method as claimed in claim 8, wherein the
20 container is filled after the step of fitting the annulus.

9. A fitment for a foodstuffs container substantially
as herein described with reference to and as illustrated in
the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 0128725.9
Claims searched: 1-9

Examiner: Darren Williams
Date of search: 1 May 2002

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): B8T (TBM, TCA, TCC, TTB, TTC, TTT)

Int Cl (Ed.7): B65D 43/02, 50/00, 55/02

Other: Online: WPI, JAPIO, EPODOC

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2349874 A (SHOWERING) see whole document, especially fig 5	1,2, 7-9
X	GB 2228258 A (PLASTICAN) see whole document, especially fig 6	1,2, 7-9
X	GB 2157663 A (AMERICAN FLANGE) see whole document, especially fig 3	1,2, 7-9
X	GB 1567884 (WICANDERS) see whole document, especially fig 2	1,2, 7-9
X	GB 795211 (NERRO) see figs 1 and 2	1-4, 7-9
X	EP 0162024 A2 (ITALCAPS) see whole document, especially figs 2 and 3	1,2, 7-9

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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